

## BOOK REVIEWS

GLACIAL ANALYSIS: AN INTERACTIVE INTRODUCTION by J. K. Hart and K. Martinez, Routledge, London, 1997. CD-ROM. single user licence £39.95 (\$50) + VAT. ISBN 0-415-15971 7.

*Glacial Analysis* is a CD-ROM based package for PC or Mac aimed at introductory level glacial geology students. It is probably best suited for first or second year physical geography or environmental science students in UK universities or their equivalent. The CD contains material equivalent to perhaps six hours of introductory lectures and four hours of practicals covering introductory glaciology, glacial geology, geomorphology and sedimentology with an emphasis on sedimentary techniques.

The CD presents a sequence of linked screens together with a contents screen. The screens can be followed logically or can be accessed in any order, and can be searched for keywords. Additional interaction is provided by an edit facility which allows the copying of text, but not, as far as I could find out, figures to a clipboard-like facility. The promised Internet linkage was disappointing, as it currently links only to the Routledge page advertising the CD. Occasional quiz questions are provided to allow 'readers' to assess their progress.

Almost every screen in the package is presented with either a diagram, photograph, animation or video clip. The picture-to-word ratio is thus considerably higher than in a standard text book. The standard of the visual material varies, some is rather pixelly, some excellent. All are in colour, although only one has an audio track.

The CD covers: introduction to the glacial environment;

introduction to the techniques; till fabric; folds and faults; and till type summary. There are also a number of exercises, a bibliography and a glossary. The CD is attractively packaged with a booklet ('user's guide'). The first section, 'Introduction to the glacial environment', covers a very wide range of material. In this section some of the material seemed to me oddly organized. For example, glacier hydrology is covered in a subsection entitled, 'Glaciofluvial deposition'. Presumably because the material has had to be trimmed to fit onto the CD, this section presented very much the 'soft bed' school of glacial geology, and is, in my opinion, somewhat idiosyncratic. The second section, 'Introduction to the techniques', was my favourite, covering broadly most techniques used in glacial geology. I felt that the material was as close to a virtual field trip as one could hope for, and introduced many of the ideas more successfully than lectures or written material.

The biggest problems with using the CD for teaching may well be practical. Its use with a class requires a cluster of machines with CD drives, certainly a rarity in my university! There are a sprinkling of typos, many of which appear to be associated with special characters such as 'ö', rather disappointing in a package with so many examples from Iceland and Svalbard.

Subject to the caveats presented I think the CD could be used successfully as part of an undergraduate first or second year course in glacial geomorphology/geology. The approach is innovative and especially appropriate to the techniques orientated contents.

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ARID ZONE GEOMORPHOLOGY: PROCESS, FORM AND CHANGE IN DRYLANDS 2nd Edition, edited by David S. G. Thomas, John Wiley and Sons, Chichester, 1997. No. of pages: 713. Price: £55.00 (hb). ISBN 0-471-97160-X; 0-471-97610-5.

We now have a choice of three tomes on desert geomorphology, all from the 1990s. In order of publication, and as it happens, of size, they are: *Desert Geomorphology*, by Cooke, Warren and Goudie (1993, 502 pages); *Geomorphology of Desert Environments*, edited by Abrahams and Parsons (1994, 674 pages); and the edited one being reviewed here (713 pages). By at least three criteria,

this volume is the clear winner. It is: (a) the biggest; (b) the most recently published; and (c) bucking the trend, it is the cheapest.

Most potential buyers will be more discriminating, and they will be happy to find that this book also passes more demanding tests. They will find authority, for, as in the first edition, this can again claim to be written by many of the leaders in the field. Most are publishing actively in the topics about which they write: the figures for self-quotation range from 0 to 16 per cent, with a median of about 5 per cent (first-author papers as percentage of those listed in each chapter). Where Abrahams and Parsons had a North American bias among their contributors, David Thomas has a British one, with even a strong slant to Sheffield (close to the driest place in England, it must be said), but they are on the whole, no less

authoritative. There are, by the way, a fair number of shared authorities between this and the Abrahams and Parsons volume, who must be judged, therefore, to be indispensable to collections on desert geomorphology. To them David Thomas has added some new and alternative voices. Potential purchasers will also find good coverage, for the new tome has 30, as against the 16 chapters in the first edition. The principal additions are the regional chapters, of which more below. Others, more welcome, include chapters on the role of vegetation in desert geomorphology (which is wider ranging than the treatments in the other books) and on dating techniques (which is much more specific). As they did in the first edition, buyers will find information on dust and extraterrestrial deserts here, which they found neither in Abrahams and Parsons nor in Cooke *et al.* The chapters on the movement of sediment by the wind in all these (and other recent) books show remarkable convergent evolution, but the one in this volume does move the story on considerably.

Even with this galaxy of authorities and novelties, does later publication guarantee more up-to-dateness? To judge from the percentages of references in the new volume dating from after the first edition in 1988, the answer is a qualified 'yes': the mean value per chapter is 32. The series, chapter by chapter, runs thus: 19; 54; 5; 32; 25; 16 (397 references!); 36; 2; 42; 51; 35; 23; 16; 27; 39; 52; 21; 20; 8; 33; 49; 25; 30; 50; 31; 18; 70; 49; 37; 40. Figures like these are a reflection of many things, the pattern of growth or decay in a subdiscipline among them. A pragmatic buyer whose interest was weathering, pediments or wind erosion, would see little advantage in choosing this volume over the first edition (and almost certainly, therefore, little advantage over the other tomes). However, if dating techniques are the focus, then this is the one to get.

The disadvantages of choosing this volume over the others are, nonetheless, many fewer than the advantages. It is not nearly as well illustrated as Abrahams and Parsons and probably not even as well as Cooke *et al.*, many of whose figures it shares or borrows. There is less on wind geomorphology here than in Cooke *et al.*, but more than in Abrahams and Parsons. All the volumes suffer from targetting too broad an audience, but this one suffers more

from this than the others, some chapters being clearly aimed at undergraduates (at this extreme, being didactic, and cutting corners in the argument), while others are aimed at a research audience (at the other extreme, defensively over-referenced, and shorter on answers than questions). Both of the edited volumes under comparison are uneven in quality (by whatever standard), but this one, I believe, is less so than Abrahams and Parsons, which is to say that the high points are not as high and the low points not as low.

My main complaint is one of the crude criterion of size. In the interests of a more saleable, portable volume, the paperback version of which would be less likely to fall apart, I would not have added the regional chapters, for these will be the least read. I am also unsure of the need for second opinions in some areas: there is not just one essay each on weathering and channels, but two; and there is a chapter on overland flow processes in addition to one on badlands. Without these indulgences, we would have had a less formidable, lighter (and probably cheaper) book. And there are gaps that would have been better filled. Although there is a chapter on 'Desert soils', it concerns no more than surface conditions, and important as these are, there is much more to contemporary soil formation than this, even in a geomorphological context. (This lacuna also occurs in the Abrahams and Parsons book.) Like the other tomes, this one is weak on applied geomorphology; the main contribution in this area here comes under 'human impact', there being very little on management (for example of wind erosion). Finally, I would have consolidated the references (there is a formidable list of references that are common to many chapters, among which the competitor volumes and numerous other publications by Abrahams and Parsons are very prominent).

All said, I am very happy to have this volume on my shelves, and, more important, to have it in the library, ready for use by undergraduates to whom I will be referring many of its chapters as their first port of call.

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RAPID MASS MOVEMENT AS A SOURCE OF CLIMATIC EVIDENCE FOR THE HOLOCENE edited by J. A. Matthews, D. Brunsden, B. Frenzel, B. Gläser and M. M. Weiss, (editors), Gustav Fischer Verlag, Stuttgart, 1997. No. of pages: 444. ISBN 3-437-25388-3.

As edited conference proceedings go, this is an outstanding example of the 'genre'. The editorial team has provided a preface which defines clear objectives and a list of 20 questions that was addressed to authors; a summary of

relevant results of the European Community EPOCH programme and a synthesis of unusual clarity. Given the complexity of the volume (32 substantive chapters including contributions from Austria, The Netherlands, Italy (4), Spain, Poland (3), U.K. (7), Hungary, Romania, Czech Republic, Germany (2), France, Switzerland, Sweden, Canada (2), Norway (2), New Zealand, Russia (2)), the editors deserve sincere congratulations. Not only is this book well-organized but it is also what it claims to be: a state-of-the-art statement on European research on the book's title theme, with some international flavour added to provide perspective. I found the book to be of absorbing interest.